

Building for Capturing Public Mind Through Ears: Evolution of Architectural Typology as a Mechanism of Auditory Deception and Urban Control

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Abstract: The paper takes the notion of soundscape and its relation to power relations within the scope of architecture. Indeed, sound has long been devised as a tool so as to control people and urban realm. The paper discusses the politics, aesthetics and social character of urban soundscape by elucidating the materialized shape of sound, that is to say; the close relationship between architecture and sound, between materiality of the physical form and its audio-spatial experience to understand how soundscape is controlled by architectural means for establishing power over masses and class segregation in various contexts. Similar to the case of physical-landscape, the soundscape in various types of buildings also manifests the idealized power relationships in any society through the control of sound in architectural space. Therefore, the auditory characteristics of these spatial precedents are elucidated in this study. It is argued that sound is a very political entity and auditory mechanisms are utilized for the purposes of both surveillance and suppression of political opponents. The paper intends to demonstrate that sound has a very dark history under the disguise of grandiose aesthetics, and thus, it is very important in establishing power. Spatial typologies are classified according to their auditory functions in relation to establishing power in urban realm.

Key words: Politics of sound, soundscape, aural space, auditory surveillance, auditory suppression.

1. Introduction

The paper discusses the role of “sound” in shaping our physical environment and argues that despite the dominance of visual and relevant aesthetic attributes of almost all edifices, there is a subtle yet very strong auditory agenda behind the majority of architectural activity. This agenda can be summarized as an endeavor to control the sound and its impacts on individuals as well as masses in order to manipulate the public perception (and thus, their thinking and responsive behavior) within a controlled spatial setting whereby this hidden agenda is enhanced with visual and other means of architectural design. Hence, architecture appears to be closely associated with power and with control of public realm not only via physical organization of space or spatial semantics,

but also via auditory design of an intended soundscape that is accomplished by architectural components as a systematic analysis of architectural precedents could clearly reveal. This paper intends to elucidate the auditory *raison d’etre* of architectural precedents that are selected from spatial typologies of both public control and power exertion.

Indeed, scholarly work has long argued and proved the direct relation both between power and landscape (i.e., space and/or place), as well as between power and soundscape. Foucault [1] interprets the association of space with identity as a problem of power and governance. Similarly, Dovey [2] points out the dialectical nature of the place by relating it to the concept of power. Foucault conceives Panopticon not only as a prison model where guardians have a central position but also as a model to describe the modern society. Thus, spatial settings seem to emerge as direct instruments of power exertion on public

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realm. This is clearly achieved through both visual and auditory mechanisms to establish a total control over all senses of human body (thus eventually on human mind).

2. Soundscape as an Instrument of Power: Sound versus Vision as a Candid Means of Controlling Urban Realm

Spatial settings have long been explained as the greatest production of human communities and thus the reflection of their daily lives and public living. It can be suggested that the very essence of the public nature of urban and architectural space lies within its capacity to stimulate human sensory mechanisms freely to encourage not only the maximum interaction with but also full awareness of their physical environment to be able to enjoy, benefit from and contribute into it towards enhancement of human existence and freedom in space. By the same token, spatial settings are also quite open to operate in totally opposite ways towards constraint of human existence and control in space by manipulating human sensory mechanisms as can be seen by the intervention of “modernity” as Van Schaik argues [3]. On a similar line of thinking, Lethaby’s [4] view on pre-modern architecture’s primary purpose being to represent the fullest understanding of the universe (within specific belief systems, regions, and communities) supports the notion of the unity of time-place and one’s mental awareness of space prior to modernity and its ramifications on modern architecture as well as modern city. Indeed, humans relied upon their ability to “read” their environment whereby they used to be in touch with the types of various intelligences (based on basic human senses) as mentioned above.

The role of the auditory intelligence and awareness in this (modern) breaking-up process is a crucial aspect, and thus should be well understood to explain how urban and architectural space is dominated at the peril of a more communal and participatory public

realm as well as its enhancing and equal experience by all parties of the society. The impacts of such a lost awareness are easily seen on modern individuals who are almost crippled and imprisoned to sterile spaces. As we are all familiar, knowledge on the mechanisms of human perception has always been important to be able to alter the urban space particularly for those who are in control of it [5]. Although phenomenological studies seem to date only back to 1960s [6], the roots of considering human behavior and perception in organizing spaces go back much earlier.

In this section, the roles of vision and sound in shaping the public realm will be comparatively examined through their mutual interaction throughout architectural history. It is argued that the evolution of urban settlement has followed a path from a holistic comprehension of urban environment to an urban policy whereby senses are devoid of each other and vision has dominated among the others. Despite the apparent divorce between the human senses of seeing and hearing, this paper will emphasize the hidden agenda of the sound to spatially control masses of people behind the glamorous self-display of the vision in shaping the physical environment via means of architecture. With reference to Van Schaik’s [3] discussion of the “problem of an urban theory that lacks an overt spatial intelligence concept”, this section tackles the question of whether such an urban theory that is devoid of human sensory awareness was implemented to lay the foundations of current neo-liberal urban development policies which globally dominated the cities all over the world at the peril of urban poor and questions the role of auditory mechanisms in this process.

The duality of vision and sound brings along a parallel dichotomy, that is to say the one between looking and listening. According to Cluett [7], “earshot” is the expression to denote auditory perception. In direct contrast to the act of looking, which is optical-linear, listening is highly polar and spatial. These conceptions are crucial when

investigating the role of sound in the discourse of power. Among these senses, “vision” gained dominance first with the discovery of the principles of optics since the late 15th century and early 16th century [8], and thus, the relationship between the vision (the gaze of the powerful ruler) and organization of spaces has determined the built environment through a highly ordered and rigidly controlled morphology [9]. Roman forum and urban plazas, where public (and naturally political) events were performed, were delicately calculated according to principles of optic and perspectives. The vision plays a primary role in this case. The control of the larger public by the powerful individual, which has direct relation with the Panopticon model as discussed above, was a key concern for those who develop and administer the cities. Another spatial feature of the cities of antiquity were amphitheatres not only because of their optic advantages for the speaker but also due to their acoustical properties as will be discussed in the next section on precedents.

As a matter of fact, sound has also been devised as an instrument in order to control people and urban space from very early times onwards. In other words, sound is directly used to control crowds and to guarantee the power of the authority over people. Thus, the relationship between the sound (the voice of the powerful ruler in the ears of crowds) and organization of spaces has also determined the built environment through hidden geometric relationships and judicious material repertory. For example, ancient rituals always used sound (and music in particular) as the main element to establish social order. Sound and principles of acoustics for amplifying its impact were determining factors in the formation of the physical environment as can be seen in the next section where architectural precedents are examined.

Furthermore, as an extreme example, the sound has been used as a torturing device in many ways; ranging from extreme silence, to extreme noise or to tensely rhythmic exposure to certain sounds. Nonetheless,

sound has a very dark history and by the same token it is very important in establishing power. Thus, sound can be used both for positive and negative purposes. Therefore, it would not be wrong to suggest that sound is a political entity and auditory mechanisms do exist both for surveillance and suppression of political opponents.

Indeed, the significance of the role that sound plays in not only in urban environment but also in all spheres of the culture is being re-discovered. Connor [10], argues, in particular, “the compelling importance of the auditory in the cultural, clinical and technological constitution of the modern self”. In this regard, the use of new prediction and simulation techniques (i.e., noise-mapping programs) to calculate urban sound propagation are becoming more prominent in urban design [11]. Meyers [12] discusses the politics, aesthetics and social character of urban soundscape by analyzing the shape of sound, in other words; the relationship between architecture and sound, between materiality of the physical form and its audio-spatial experience to understand how soundscape is controlled by architectural means. Regarding the use of sound in public realm (in form of; the music, the spectacles and other events), auditory mechanisms emerge to control urban space particularly after the rise of capitalism, while urban setting follows a parallel track to host these events towards a total control of public realm.

Gradually, a major new interest, as Damousi and Deacon [13] asserted, in the history and anthropology seems to have recently begun paying attention to how modern life has been shaped by the auditory environment as much as by the visual one. Because, based on the discussions above, it is known that by juxtaposing a number of disparate environmental elements and constructing noise components in a manner which emphasizes sonic manipulation, urban and architectural realm can easily be controlled. Haney [14] compares aesthetic experience of democratic values versus signifier for the identity of

powerful class. He also discusses how they are related to sound in addition to sight. At this point, therefore, it is of interest to examine architectural precedents that sound plays the major role in influencing human behavior. The following section will examine and classify these typologies according to their auditory functions in regard to the relationships between power and the emergent soundscape.

3. Typologies and Precedents

In this section, the role of architectural spaces and their acoustical features will be discussed in manipulating auditory human perception. The sound, its physical behavior (reflection, absorption and diffusion) and its psychological impacts have generated spatial typologies from the very early phases of human existence. Arenas, where emperors gathered their citizens in masses in a very impressive soundscape and where the power of the empire is brutally demonstrated or other sport venues as modern versions of ancient arenas where feelings of masses of people were all audibly controlled. Likewise, parliaments or senate houses of the modern era undertakes a similar function while auditoriums and concert halls take a more specific form in controlling the sound.

In the light shed by above-discussions on the relation among power, spatial control, vision and sound, this section will examine and classify spatial typologies (such as architectural and urban precedents) according to their auditory roles in establishing power in space. Having reviewed the history of architecture as well as history of politics, no matter how publicly or how anonymously they are considered at design stage, public buildings accommodate another layer of meaning or rather another function of representing the authority which built that edifice. The ramifications of this unavoidable trend are still valid and visible in present time where political leaders are in competition to utilize architecture to mark their reign. The parallel histories of architecture and politics reveal that these

public buildings intend to control the masses that they gather. From the very early dates onwards, builders have the secondary (or probably the primary) objectives of; observing the crowds that these buildings and spaces gather, influencing their perceptions and behavior, and finally manipulating their actions and soothing (if not preventing) their initiatives against the authorities. As discussed above, the visual means for these actions had long been systematized via disciplines of geometry and optics. However, the auditory means to achieve these objectives were only known to the elite who had the privilege to control public realm in terms of urban space as well as soundscape. Thus, it can be suggested that the auditory functions of spatial precedents can be classified as threefold; surveillance, manipulation and finally suppression. Therefore, the spatial typologies in regard to these precedents will be elucidated under the following categories:

- typologies of auditory surveillance;
- typologies of auditory phantasm and manipulation;
- typologies of auditory suppression through extreme silence.

Doubtlessly, some precedents could be considered in more than one category, however, it will only be considered in one category whereby its auditory function is considered the most dominant.

3.1 Typologies of Auditory Surveillance

Among many public building typologies, some of them are directly related to the establishment of a social order such as military barracks, parliaments, hospitals, mental asylums, schools, courthouses etc. From their façade design to spatial configuration, they all reflect a model of an idealized structure of the intended society. Among these, courthouses where relationship between the state authority and alleged criminals clearly reflect the power relations in our society will be the focus of analysis in this category. Doubtlessly, like the physical-landscape, the

soundscape in these buildings also manifest the idealized power relationships in that society through the control of sound in architectural space.

Recently, many researchers have been interested in understanding the interaction between legal systems and spatial organization [15-18]. Space (physical, spatial and auditory) has the primary importance in any practicing of power by congregating people in space and manipulating their behavior [19, 20]. In that sense, court houses are (spatial and auditory) typologies where people are segregated on their position against the law and their relative privacies (or isolations) are provided by means of organizing space through vision and sound [21]. According to Fischer-Taylor [22], since the legal system depends on oral testimony and an adversarial procedure, the appraisal of the trustworthiness of a speaker in a courtroom, which almost becomes a stage of performance, depends on the physical, visual and acoustic characteristics of the space. However, the conventional characteristics of the space is deliberately disrupted in a courtroom where the defendants usually are in a position to make confessions or tell highly personal stories, which are usually made in more intimate and less reverberant spaces. People usually have intimate conversations in, what social anthropologist Edward T. Hall [23] described as the intimate sphere (which ends up half a meter). This intimate sphere is the shortest social distance. However, as Mulcahy [21] points out, the speech heard in the gothic architecture of the Royal Courts of Justice in London or the Peace Palace in the Hague are very good and extreme examples of how the court is acoustically a very different (i.e., reverberant) place from a living room in an apartment or an academic seminar room. The sound of any speech and particularly, the gavel as the sound mark of the courtrooms, resonates and envelopes people.

Carlen [24] argued that “spatial arrangements that might signify to the onlooker a guarantee of an orderly display of justice, are usually experienced by

participants as being generative of a theatrical autism with all the actors talking past each other”. Having focused on defendants’ perspectives, Carlen [24] also asserts that the people who are not used to the court system would experience a debilitating feeling by the manipulative character of the space, which engender humiliation and disinterest. Mulcahy [21] also points out that majority of the defendants abandon the pretence of understanding after initially trying to follow the proceedings. According to Carlen [24], the courtroom is highly an engineered and theatrical place, where the conventional visionary and auditory relations are manipulated to emphasize the discipline and justice and ‘alternative performances evocative of unpermitted social worlds’ were suppressed.

Mulcahy [21] states that the design of courtrooms exhibits a difficult dilemma between the demands of authority and security and humanity. Having based his view on the historical evidence that architects cooperate with political actors in creating dominant social images of existing social institutions, Tchumi [25] is skeptical about architects’ willingness to challenge existing architectural practices. In other words, architects render the existing social and political structure of the society into spaces and thus less evidently into the relevant soundscapes. In keeping with this approach, architectural specifications for the design of courtrooms with their sophisticated forms of segregation and surveillance clearly exhibit an exercise of power which is an inherent part of the design. This is very evident in the Court Standards and Design Guide (Department for Constitutional Affairs, 2004, London) which shows that the architects would design courts according to the tradition.

The trial known as *V vs United Kingdom* (1999, ECHR 171) is an interesting example where the juvenile defendant became successful in his assertion that the physical design of the courtroom contributed to the violation of his right to have a fair hearing and thus human rights. Mulcahy [21] reports that the dock

was raised with the intention that the defendant could see what was going on around him; however, instead this made the hierarchy and power more visible and had the opposite effect of increasing the defendant's discomfort. It was also reported that the defendant's feeling of discomfort lessened only after he stopped listening the proceedings. In other words, the defendant started to feel comfortable only after he shut down the soundscape around him. Thus, eventually, the defendant could poorly express himself and instruct the council. This is an example of how physical design and the exerted soundscape of the courtrooms become physical manifestations of hierarchy and power and especially the soundscape inhibit participation and understanding of the proceedings.

Without suggesting that surveillance and discipline in the courtroom are inappropriate per se, Mulcahy argues that the physical setting of the courtrooms might weaken the participation of the defendant and spectators. It is also important to note that the debate on the relation between the physical settings and judgment process in courts have been out of the public sphere. Thus, while the evidentiary practice is being intensely debated regarding the civil liberties; the use of courtroom space and its soundscape have come to restrict behavior in subtle manners and become an instrument of power.

3.2 Typologies of Auditory Phantasm and Manipulation

Some typologies have deliberately and successfully been shaped up so as to control the public synergy which might be destructive by turning into a collective rage, at times, against the powerful minorities of the society. These spaces have been major investments and grand constructions funded by governments and designed to accommodate grand masses with the purpose of uniting them for exciting and entertaining events (such as games, theatres, concerts, propaganda meetings etc.). However, it can be speculated that they

are also built with the underlying agenda of taking away the pressure from the public (particularly the poorer segments of the society) and meet their need to gather without allowing them to be engaged with unwanted activities that might be quite harmful especially considering the great potential of crowds to challenge those in power. This tendency and the associated importance given to these typologies can be still observed in present times from ancient times onwards. Special venues for grand concerts, soccer cups, Olympics, festivals, etc., currently serve the same function of relieving public thrust on daily problems and pressures. Thus, like the physical-setting, the soundscape in these grand edifices (such as theatres, arenas, stadiums, etc.), too, puts forward the idealized power relationships in that society through the control of sound in architectural space. Hence, the auditory characteristics of these spatial precedents will be examined.

3.3 Ancient Greek/Roman Theatres and Arenas

The classical Greek theatres were built on slopes for public performances such as tragedy or public assemblies gathering thousands of people [26]. The fan shape of these theatres implied usually poor visual and acoustic conditions [27]; especially on the peripheral seats. The seating of Greek citizens was arranged in an egalitarian manner whereby citizens took active part during performances [28]. However, even though the Greek seating arrangement in theatre was thought to be egalitarian, peripheral seats, which have poor acoustic and visual quality, were allocated for guests that were considered as not-very-important such as women or late-comers [26]. This would imply that acoustic space was still not equally distributed among its citizens in a culture which was considered to be a very democratic society.

Aural communication was essential for a participatory democracy like in Athens. It would be argued that hearing is not only a social phenomenon but it is also a political phenomenon. The connection

between politics, aurality and the theatre which is one of the most important architectural spaces in ancient Greece goes deeper as well. Roselli [29] argues that “in the social space of the Athenian theatre, the ways in which people interacted constituted a form of political action: audience space was a means of producing ideas about the community.” As Robertson [30] asserts, the way of hearing would function as a unifier in a group capable of conveying information and belongingness to a specific social or national group. Therefore, it could be argued that the Greek theatre was a political space since it tried to regulate who would be hearing better in the society.

In regard to the soundscapes of the Greek theatre, Robertson [30], referring particularly to Athens, suggests that it was an acoustic space and part of an aural community. Asking the question of how the characters in these plays do hear, she suggests that hearing can occur physically, socially, publically and politically respectively by a thorough examination of well-known tragedies¹ [31]. In sum, she concludes that the act of hearing is an invasive process in which the voiced sound, mobile and semi-autonomous, can expand into new spaces, stage and body alike. She describes Athenian tragic experience and performance as much aural as visual, because the audience listens to the actors, yet the characters on stage were seen as bodies listening. And when the so-called spectators left the theatre, the audience would have remembered the performance verbally and aurally.

“Scenery, identification of characters, and even action were much more heavily dependent on description than on depiction. Whether the primacy of sound over sight was the cause of this or whether the venue created the seeming primacy of sound over sight, the result is the same: the action of tragedy depended on listening and, therefore, the theatre was

designed, by trial and error, to promote hearing” [23].

On the same topic, Potamianos [28] also suggests that performances in Greek theatres were not only a visual experience but also, and even may be more of an auditory experience. According to him, philosophers and theoreticians had been debating on the notion of “visual qualities versus its hearing qualities of Greek theatre” since antiquity [32-34]. The debate over the visual vs. auditory characteristics of Greek theatre would appear to be a never-ending debate; however, it could be argued that the auditory spectacle of Greek theatre is almost as strong as the visual spectacle.

In regard to the Roman spectacle, the construction of permanent theatres was prohibited in Rome due to political reasons [35, 36]. There were many incidences of attempts to prevent people from building a permanent theatre; yet smaller and wooden temporary theatres were allowed [37]. Modern scholars think that authorities were against the erection of a permanent theatre which would provide seats for the populace. The nobility thought that such a structure would enable politically explosive gatherings. The senate considered permanent theatres politically dangerous since public demonstrations regularly took place in Greek theatres [37].

However, in the late Republic, political and social conditions changed. One of the first construction attempts for a permanent (masonry) theatre in Pompeii was between 61-55 BC in Roman Empire² [38]. Permanent entertainment venues were the natural result of the gradual evolution of using entertainment as medium of propaganda. Permanent entertainment venues and elaborate spectacles were ways of showing the power distribution and making propaganda. As Futrell [39] argues that the distribution of Roman theatres shows the endeavor of Roman Empire to “Romanize” subjected people. Permanent entertainment buildings and their spectacles became

¹Having analyzed different ways of hearing in Greek tragedies and various connotations of hearing for the main characters, Robinson (2014) gives Oedipus as an example; for whom “hearing is an expression of his political status and ultimately a cause of his fall from power.”

²In Rome, Pompeius built the first permanent (masonry) theatre on his own property in 61-55 BC and he claimed that it was a temple, not a theatre. It had a capacity of 17,000 people.

mass communication tools [40]. As Manuwald [37] discusses, C. Claudius Pulcher, who was an elected official of Rome responsible for public works and public buildings, had a machine that can produce sound effects such as an imitation of the noise of thunder to exert the state's power to the audiences. Alten [40] argues that this worked both ways: firstly, from emperor to the mass. Through entertainment and its permanent venues, he was able to convey political, cultural and ideological messages and legitimize his power; secondly, the mass, deprived from any direct political influence, could express their positive or negative political feelings during the spectacles. Spectators could express their discontent through chanting [28].

Nevertheless, the architecture of the Roman Theater could also be seen as a manifestation of social control and hierarchical display that could characterize Roman Empire. On the contrary to Greek theatres that had a more egalitarian seating arrangement, Roman audiences were clearly divided according to not only their nationality, and gender, but also class, profession, and marital status [30]. This was mainly in relation to the distance from the stage; where the distance from the stage and the direct sound usually determines the acoustic quality for the audience. From this perspective, the enclosed architectural form of the Roman Theatre could be seen as a filtering device by restricting the access to the building. Similarly, the system of vaulted substructures within the Roman Theatres are also primary spatial elements that could facilitate the channeling of spectators to the correct seating segment of the theatre in according to their class and status.

Consequently, ancient theatres, arenas are where emperors gathered their citizens in masses in a colossal soundscape and where the power of the state is brutally demonstrated. Stadiums or other sport venues as modern versions of ancient arenas have emerged as new stages where masses of people and their certain feelings are both satisfied and controlled

in acoustically calculated settings. The sport venues are designed to increase the interaction between the crowd and the players. The venues like Emirates Stadium or Wembley which separated the fans from the pitch are usually thought to have a very corporate and sanitized feel; which could be argued to have a manufactured, engineered sound as Wilson [41] argues based on the views of the fans. However, the stadiums which traps and amplifies the crowd noise are usually considered to create a better atmosphere [42]. This glorification of noise in a football stadium is a very important element of the stadium experience and contributes to the satisfaction of the masses.

Ancient theatres and gradually modern arenas, which are discussed above from the viewpoint of their role in visually controlling masses in urban space, for instance, were also used as auditory devices to convey the messages to a large audience through delicately calculated behavior of the sound in space. Therefore, it could be asserted that sound and associated spatial typologies have long been used as an instrument to control people within public realm.

3.4 Typologies of Auditory Suppression through Extreme Silence

As an extreme case of sound manipulation through spatial settings, the final typology of "the architecture of auditory suppression" is worth examining. Similar to the former two different typologies discussed above, spaces of extreme silence have a deliberate function of controlling the people that they accommodate to a level which their perception, orientation and thus psychological condition are directly distorted. This is a direct manifestation of power relations executed through the appropriately designed soundscape.

3.5 Anechoic Rooms

Anechoic room is a very unique type of space where sound is totally absorbed, and thus, any reflection or reverberation is completely eliminated. Having expected to hear silence when visiting the

anechoic room in Harvard University in 1951, Johny Cage famously said that he still heard two sounds [43]. This view has been supported by Schafer [44], when he said “There is no such thing as silence. Something is always happening that makes a sound”. De Geest [43] also argues that exposure to silence can be easily perceived as daunting and threatening, especially in the western culture, where people are in constant turmoil and noisy soundscapes. The silence can cause negative emotions of oppression, anxiety, boredom and terror to name a few.

The most extreme room where “silence” can be experienced is anechoic rooms; which are being used by scientists for acoustic measurements and experiments. The anechoic rooms are usually covered with thick 100% absorptive materials on all surfaces to prevent reverberation and the structure is usually a floating structure to assure very high level of sound insulation. The effect of the high absorption, lack of reflections and elimination of the background noise create an extraordinary sense of hearing [45]. More importantly, since the anechoic room does not have any reflections, people cannot get feedback from the space such as its volume or materials. This might create the “spaceless” feeling as Blesser and Salter described [46]. Some people also report that they start hearing their own heartbeat or respiration after sitting in an anechoic room; however most importantly people report to feel isolated and zoned-out [45]. As Blesser and Salter [46] claim in the absence of the background noise and reflections; the activity of organs enclosed within the listener’s body thus becomes part of listener’s acoustic space. People are also so used to the noise that encapsulate them, the feeling of being in a silent room is perceived as uncanny.

Mason and Brady [47] reported in their experimental research that hallucinations were instigated in people after fifteen minutes of sensory deprivation in an anechoic chamber (completely dark and silent). The hallucinatory experiences were more

prominent on subjects who were prone to hallucinations; however, the other subjects also reported hallucinations to a lesser degree. Even though it was questioned by Bell [48] whether the experimental method rather than the silence caused hallucinations through heightened anxiety; some researchers (i.e., Cox [49]) would tell that visiting the anechoic chamber is a strange and unnerving experience. It could be claimed that anechoic rooms would mostly create a spacelessness [46] feeling and a different auditory space for the visitors.

Pistrick and Isnart [50] investigate the role of sound and silence as social indicators of space. In this regard, they examine the relation between sound and sociality and silence and asocial behavior. They also look into the perception of sound as an asset versus perception of silence as an intimidating medium. Referring to Sbardella’s [51] work on nuns’ lives in a monastic Catholic context, Pistrick and Cyril claims that the careful preservation of their soundscape by the nuns shows that soundscapes are manifestation of social practices depending on different collective contexts. Silence is not “devoid of sense” yet meaningful as a highly symbolic resource which may refer to Foucauldian understanding of power (thus political) hierarchies [52]. At this point, Pistrick and Isnart [50] further examine the main factors that define soundscapes. They question whether the soundscape is a result of socio-economic circumstances or it is a pre-conditional cultural pattern, which is linked to habitus.

Although it may be hard to answer and the relation of sound and space is flexible or continuously changing, above-mentioned discussions indicate that specific soundscapes are at least manipulated if not deliberately and totally redesigned by those in power and in control. Here, the “positioning of self” [53] gains significance in regard to who is power and thus who uses the political properties of soundscapes to control “others” [54]. As Deleuze and Guattari [55] argue, these positions are never constant and

continuously changing as the above-discussions reveal the role of sound in expressing power or suppression have significantly shifted within the last two centuries.

3.6 Prison Cell

Prisons emerge as typical spatial manifestations of the duality of “crime and punishment” where the established rules of citizenship, power relations are re-established in terms of architectural space configuration. Such a duality of crime and punishment is clearly enhanced through their binary soundscapes where sound and silence play an important role. In other words, binary nature of soundscapes is utilized to amplify social segregation (as convict and guards) within the context of prisons. As prisons being the extreme example of controlled and deliberately manufactured, set soundscapes, how sound completes a specially created paradox (safety and danger, security and openness) through auditory landscape is of particular interest. Kirkpatrick [56] suggests that prison very well epitomizes binary soundscape: either too loud or, at times, inhumanly quiet. In fact, the auditory environment in prisons might be associated with different positions of people against the law, that is to say, officials/guardians on the one hand, and the convicts on the other. This uniquely extreme power relationship is, according to Dovey, a spatial paradox deliberately achieved through spatial and binary soundscape organization.

Bentham’s [57] Panopticon clearly shows the effectiveness of power exerted by both vision (pan-opticon) and aural-surveillance (pan-audion). Bentham’s prison (which was defined as “a machine to grind rogues honest” by himself) also introduced “solitary cell” (which is a very well sound-proofed room as the anechoic room discussed above) as a primary mechanism to isolate inmates from each other and to rehabilitate them (in other words, totally controlling and manipulating them) [58].

Mainly, two types of prison systems developed in 19th century and they still exist; separate and silent

systems³ [59]. While the separate system keeps the inmates in total isolation from each other; the silent system congregates the inmates into communal workshops; however, forces them to work in complete silence. How these two types evolved historically and become differentiated illustrates the adoption of binary logic in the soundscapes of prisons as a mechanism to segregate convicts and guards [58, 60]. Since 19th century, radical acoustic control measures have been executed by the guards who walked through the corridors with their specially designed shoes so that their footfalls were muted; however, all the stray noises were amplified in this extreme silence. The convicts were confined to a total solitude with isolated cells, where extreme measures were taken to make them soundproofed and enclosed exercise yards. Doubtlessly, architectural elements designed to implement visual surveillance were also in line with acoustic control to prevent inmates from making noise or any type of sound and also communicating with each other. Yeung and Somashekhar [61] claim that prison planners and reformers were mostly concerned with finding ways to prevent the sound making, noise, talking and also establishing acoustic control to establish discipline. Shalev [62] reports the increasing use of solitary cells in the early 19th century prisons. Having examined the medical journals of the time, Grassian and Friedman [63] report that the solitary confinement was one of the main factors for the development of mental diseases among inmates. It can be argued that the soundscape of isolation was giving no realm of resistance, subversion or anything of the kind for the prisoners in their relations with the authority or the powerful.

The soundscape of prisons varies depending on the type of housing, the level of interaction between the inmates and between inmates and guardians. However, the most extreme soundscape is to be found in the

³In the early 19th century, models prisons were developed in North America and Europe to experiment new methods of punishment. Separation and silence as acoustic control measures were imposed to reform the inmates.

solitary cells of supermax prisons, where well-known criminals and terrorists are kept under high-security conditions. The solitary confinement, has a significant impact on human health, particularly when the duration is not known [62]. Solitary confinement is already identified as psychological torture by international experts [64]. Moreover, solitary confinement creates an extreme authoritarian control over the all facets of prisoners' lives [65, 66].

On the other hand, Jacques Attali's [67] assertion that noise's "appropriation and control is a reflection of power that is essentially political" manifests itself in the sonic torture soundscapes (such as prison cells) which not only consists of the noise itself, but also the devices that broadcast it. About the spatial dimension of sonic torture, architectural elements are designed to intensify the capacity of sound as a medium of conveying power and converting it into objectified pain. As Rejali [68] suggests, such pain which ruins one's world would also impose the myth of the state's legitimacy in that silence. Scarry [69] claims that the prisoner's pain is "perverted into the fraudulent assertion of power, that the objectified pain is denied as pain and read as power". Furthermore, when associated with the daily practices of the authority exercises in prisons [70], it is not hard to suggest that this spatial model is echoed via auditory model to be able to exert power. Sterne [71] relates the production of sound to power; referring to Attali [67], he marks the transition of such power from gods to humanity. In other words, soundscape seems to help materializing the divine power onto the urban realm through help of architecture.

4. Conclusions

The paper discussed the role of "sound" in shaping our built environment by examining the spatial precedents throughout architectural history. The main argument of the paper is that, there is a subtle yet very strong auditory agenda behind the majority of architectural activity despite the dominance of visual

and relevant aesthetic attributes of almost all edifices. The paper attempts to reveal the underlying endeavour of architecture to control the sound and its impacts on people so as to manipulate the public perception. Furthermore, it intends to show how architecture alters public thinking and their responsive behaviour through various attributes and mechanisms of soundscape particularly within a controlled spatial setting whereby this hidden agenda is enhanced with visual and other means of architectural design.

Along this path, this study tackles the question of whether such an urban theory that is based on a manipulated human sensory awareness was implemented to pave the way for ongoing neo-liberal urban development policies which globally dominated all the cities in the world at the peril of urban poor by questioning the role of auditory mechanisms in this process. It is clearly seen that the sound, its principles of dissemination (reverberation, absorption and scattering) and its psychological impacts have brought along various spatial typologies from the very early phases of human existence. In the framework of the relationships among power, spatial control, vision and sound, spatial typologies (such as architectural and urban precedents) are examined and classified according to their auditory roles in establishing power in space. It is derived that the auditory functions of spatial precedents could be classified into: surveillance, manipulation and finally suppression. Hence, the spatial typologies in regard to these precedents can be grouped within the following categories of: typologies of auditory surveillance, typologies of auditory phantasm and manipulation, typologies of auditory suppression through extreme silence. Consequently, it is seen that the common ground among these spatial typologies focuses on their use of the attributes of soundscape and its principles of the dissemination of sound according to the existing power and class relations in any society.

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